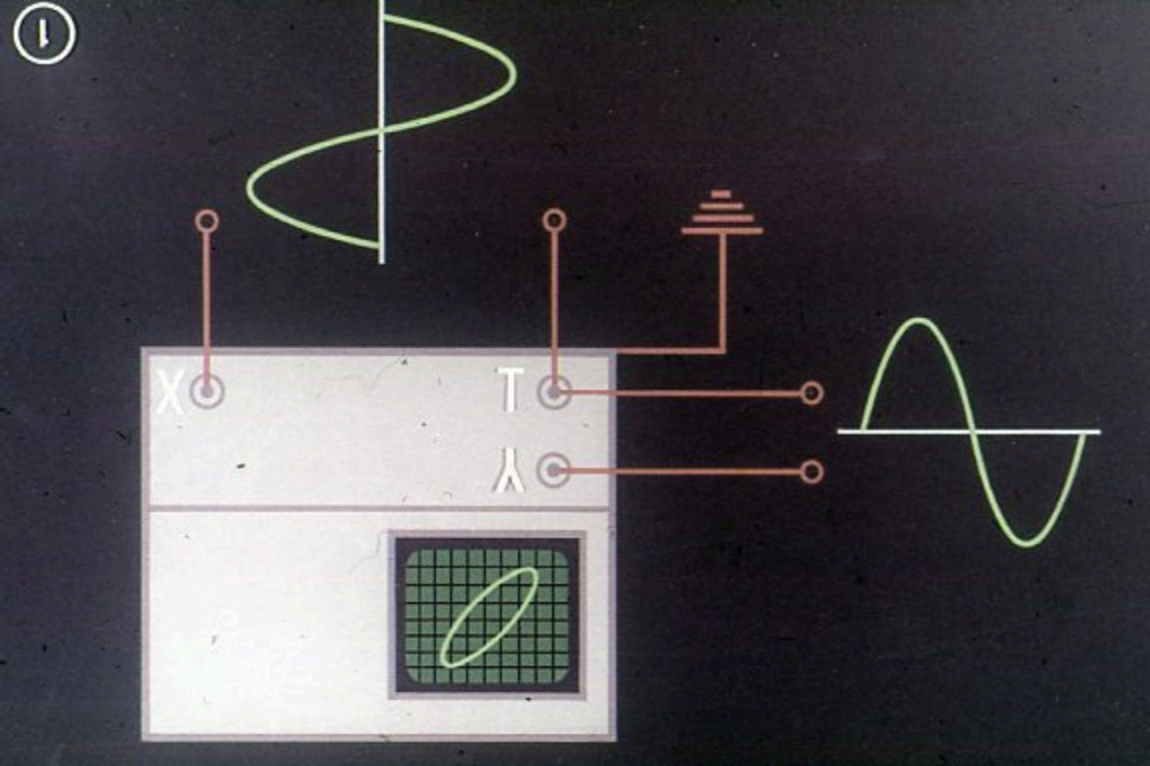
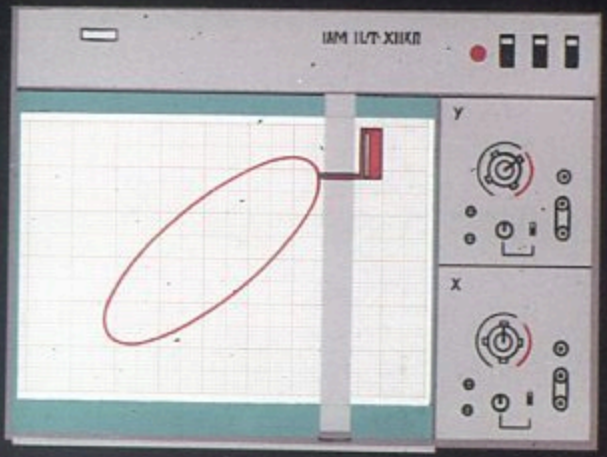
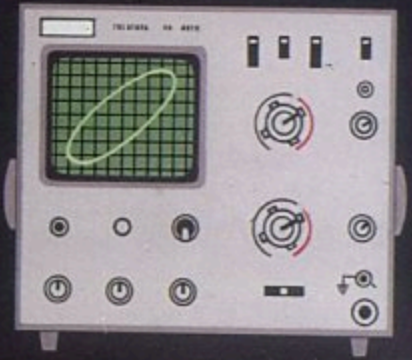
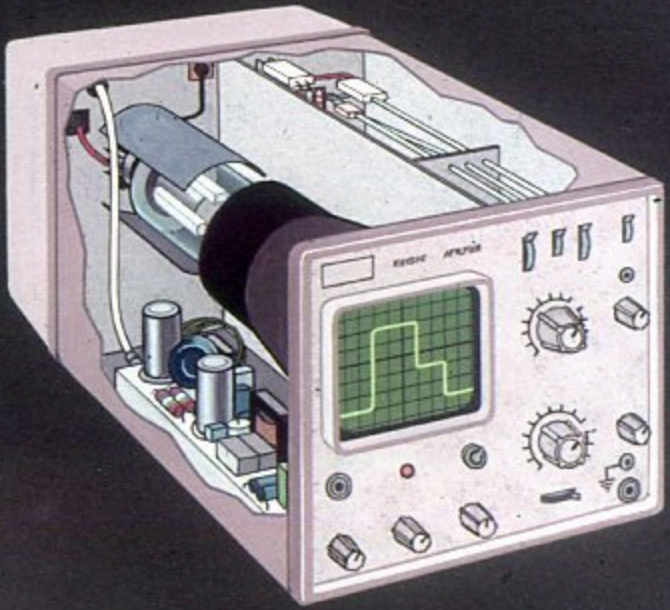
OSCILLOSCOPES

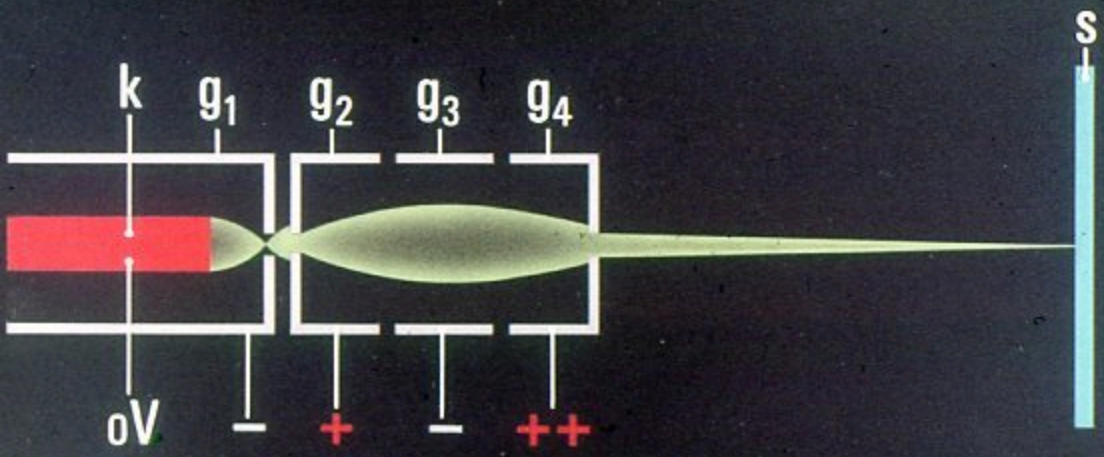
BASIC PRINCIPLES

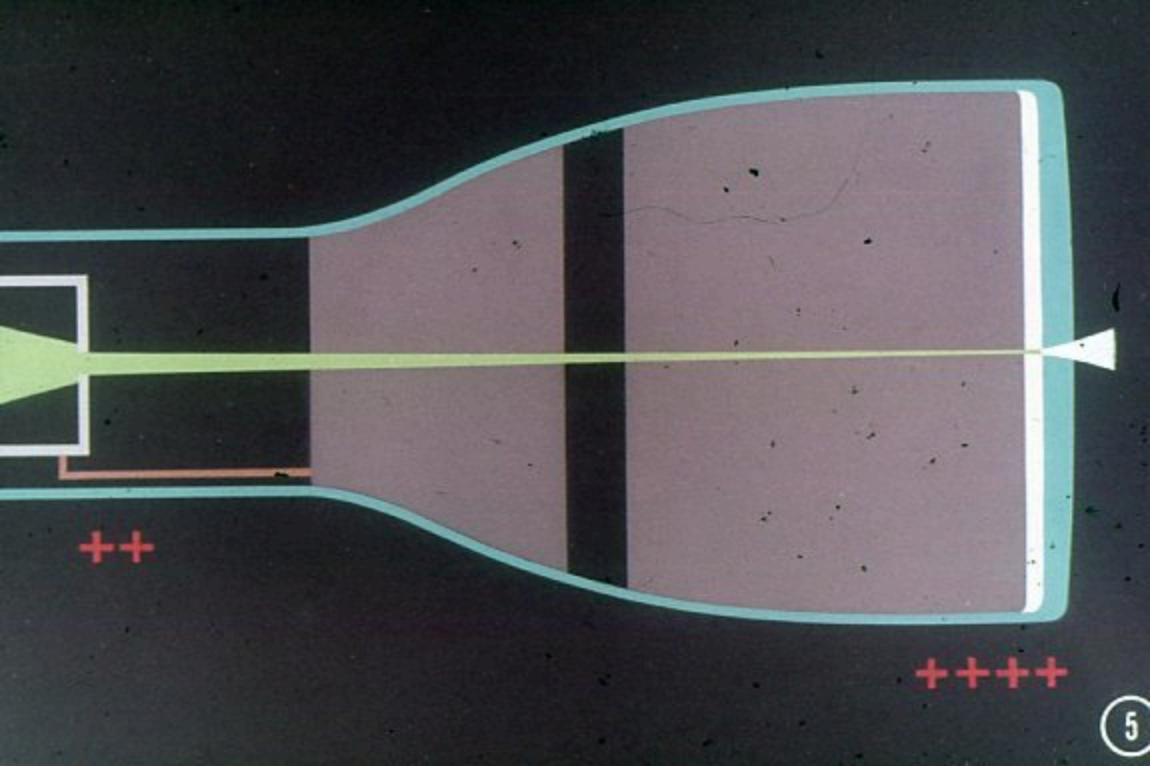

X
T

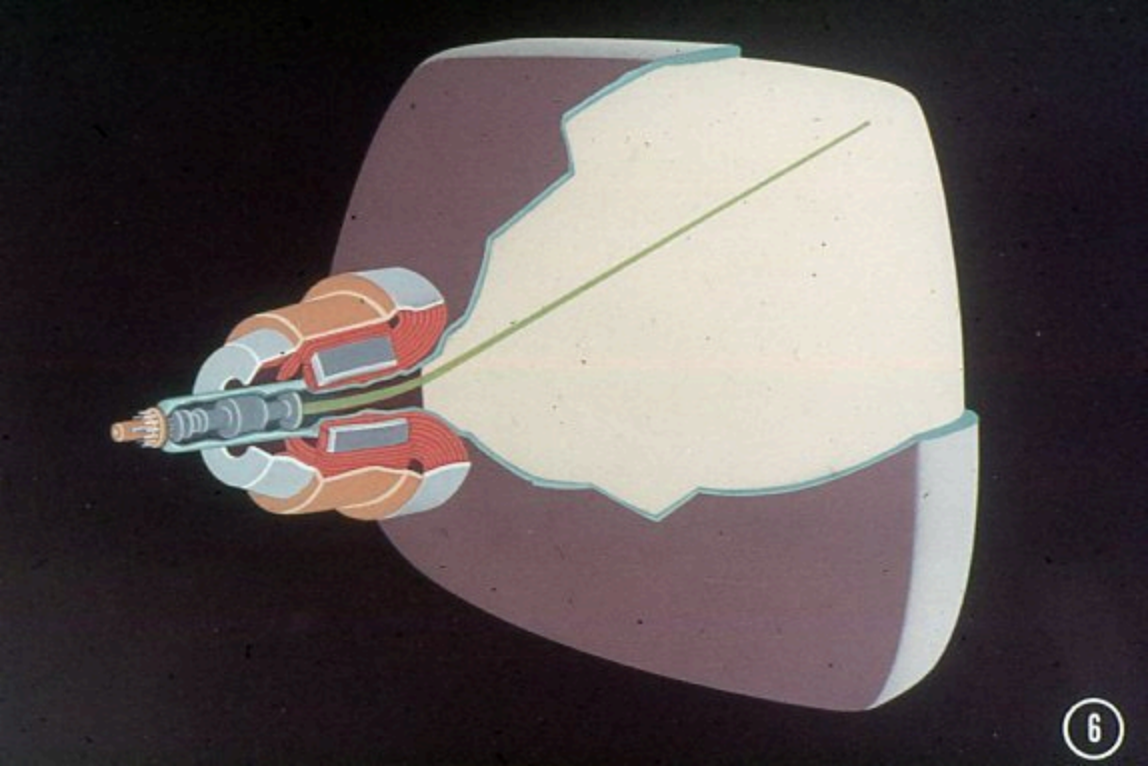

Y
X

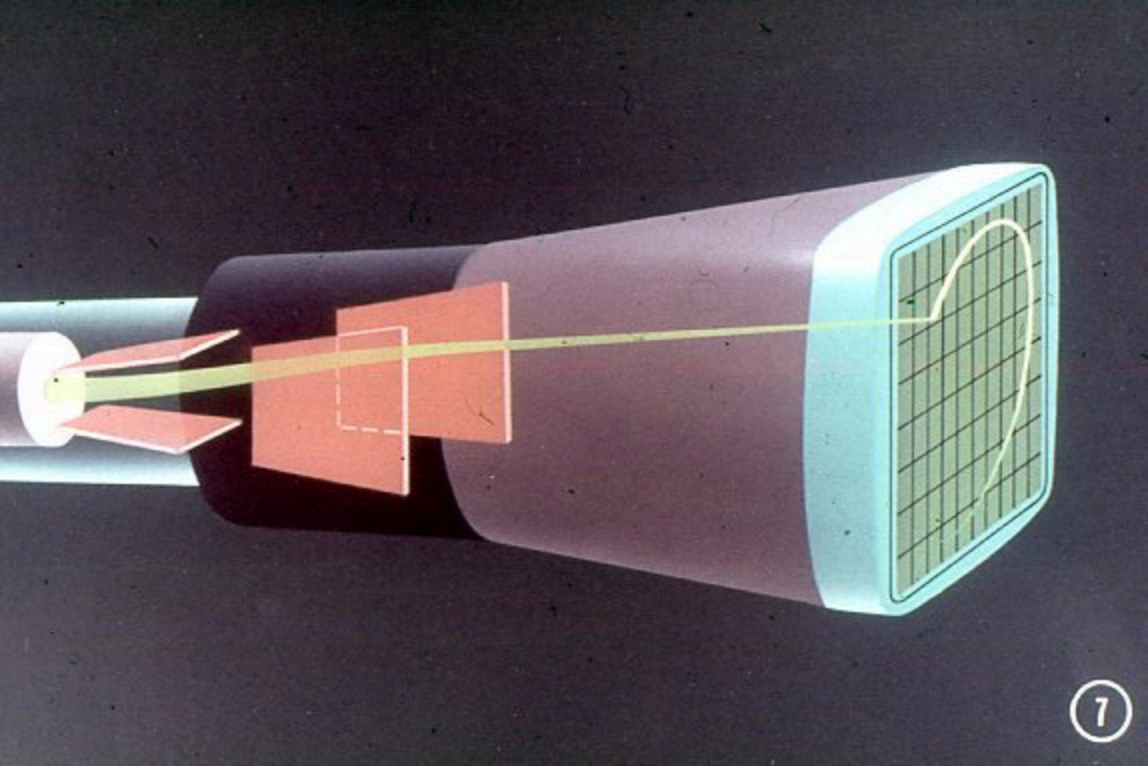


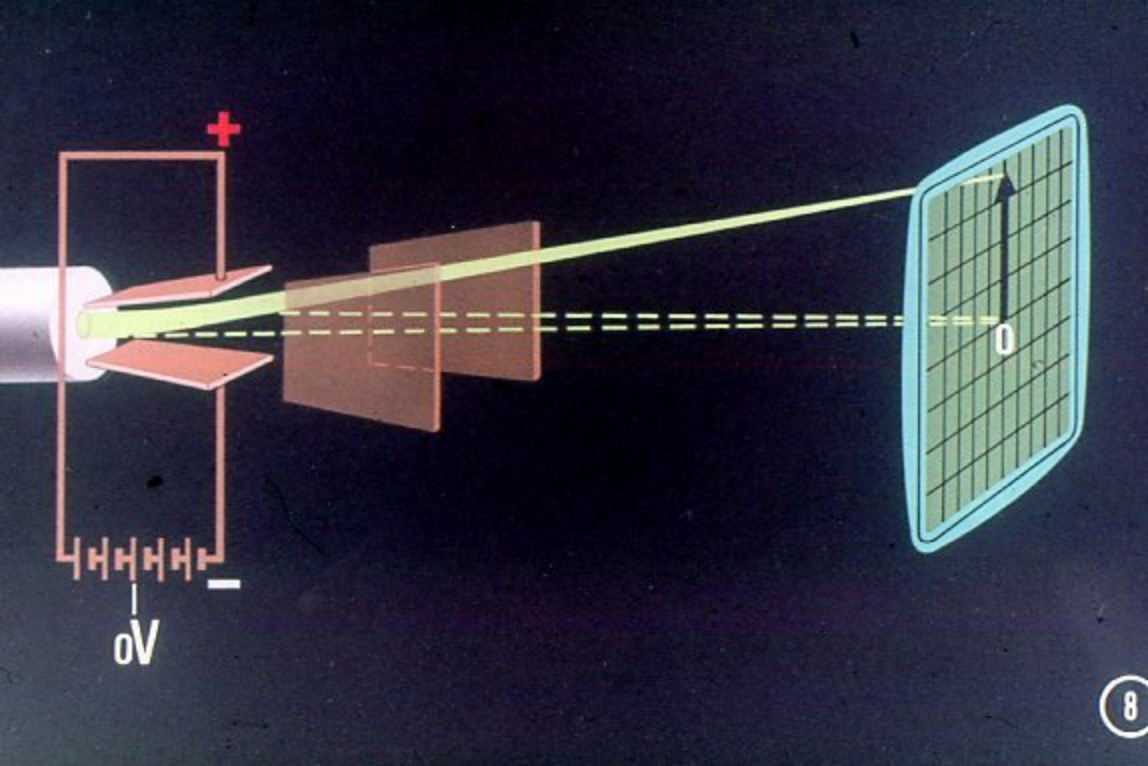


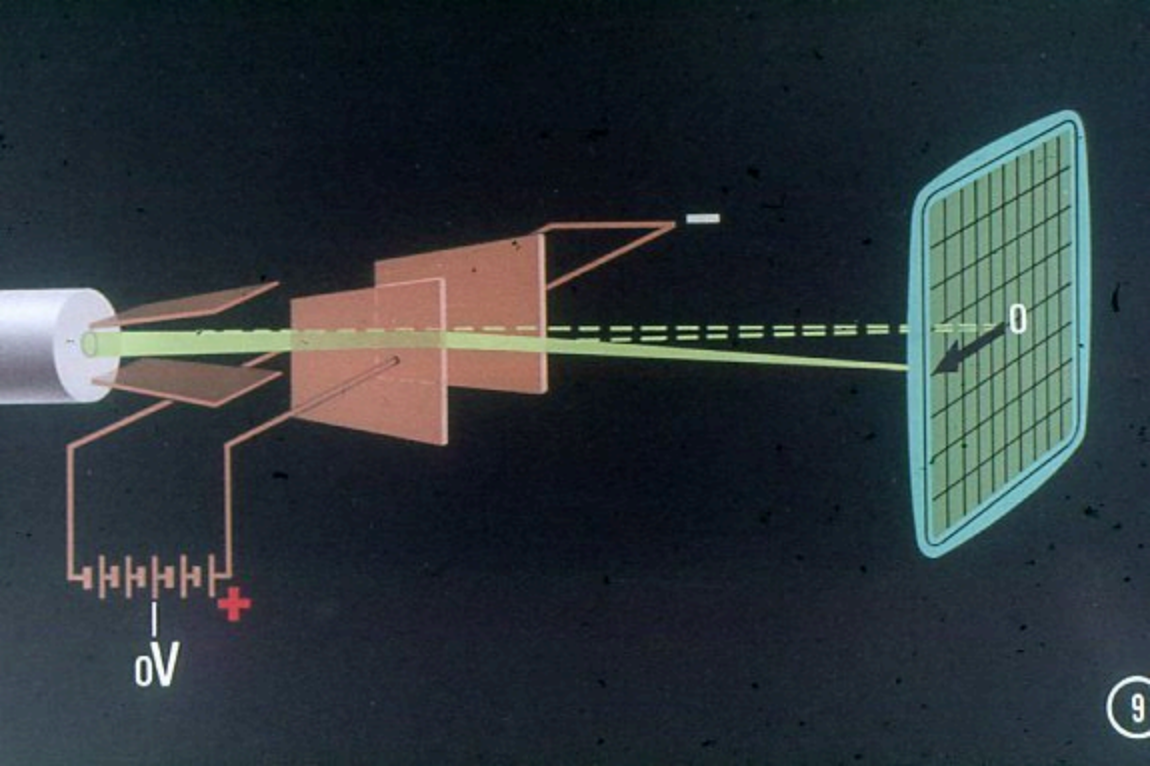

k
g1
g2
g3
g4
S
oV
–
+
–
++

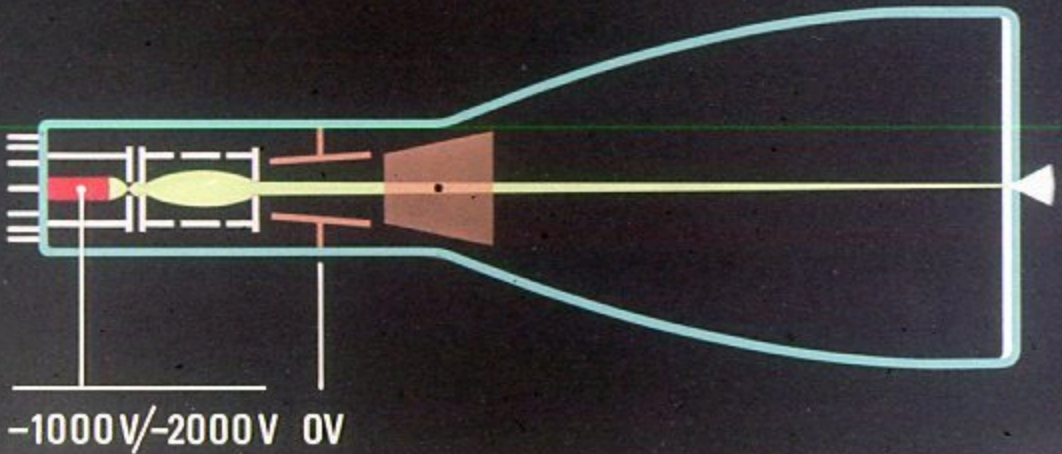


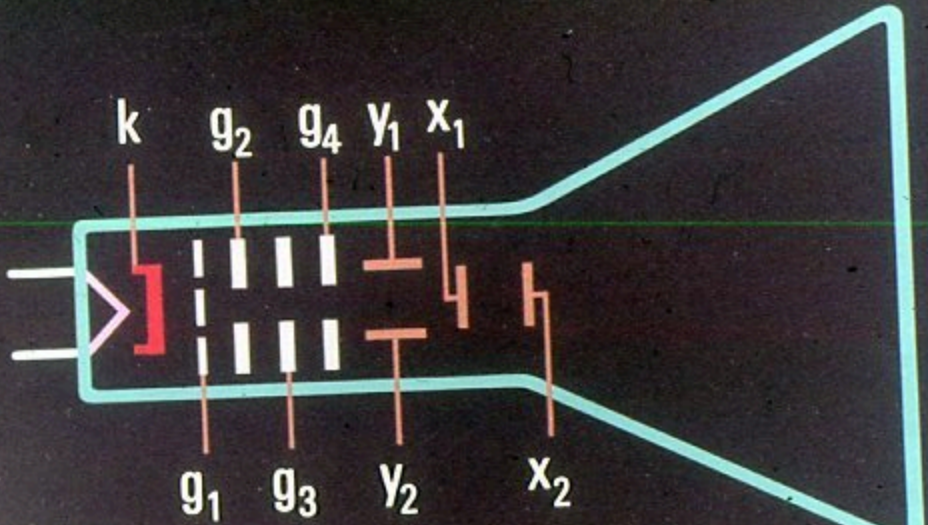


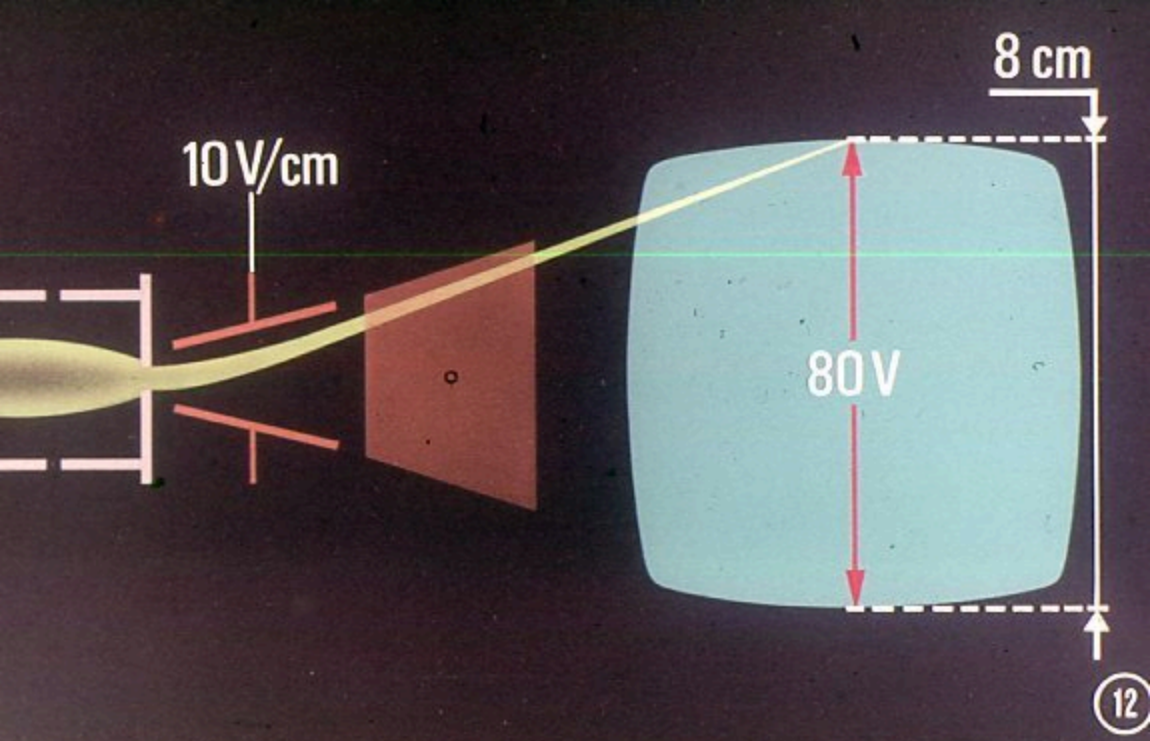


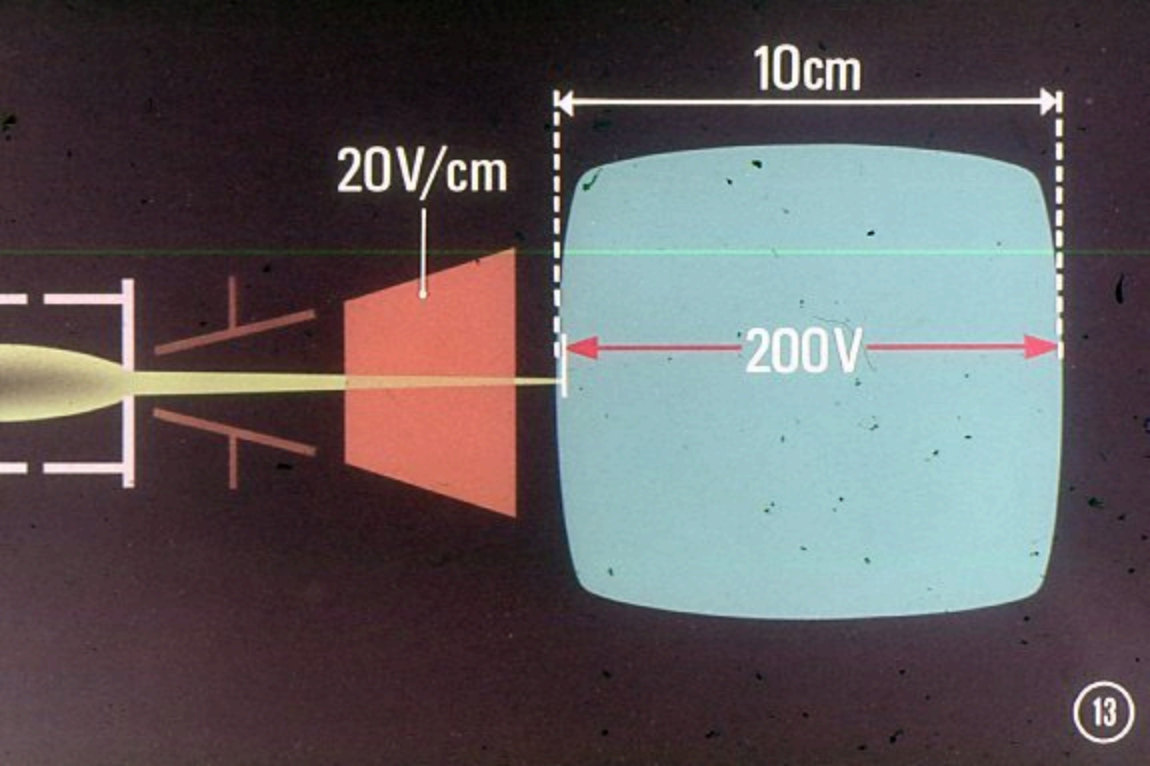

+
0
0V
–

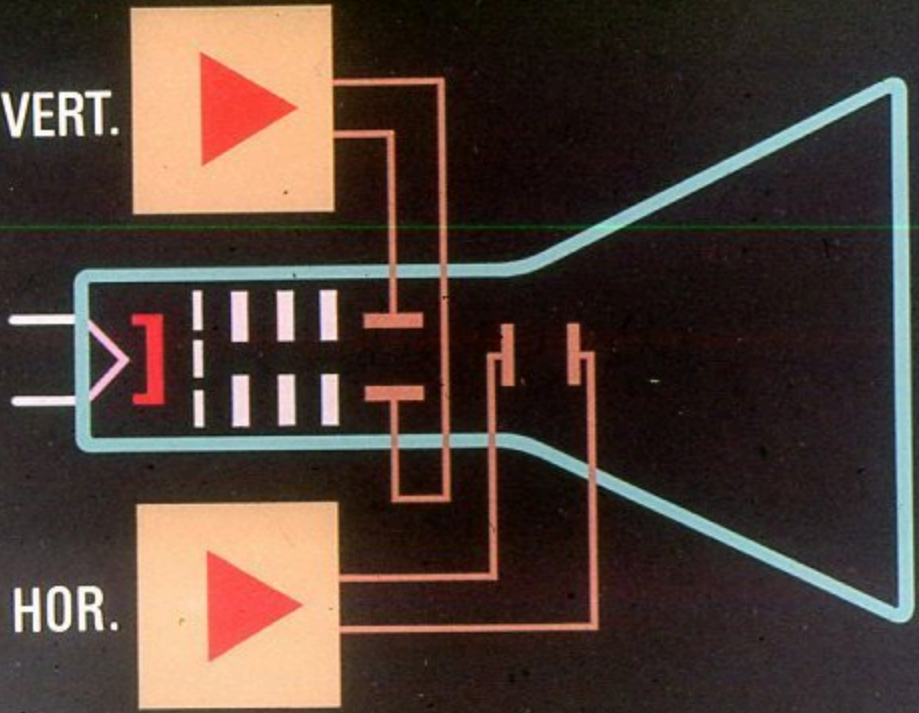

0
0V

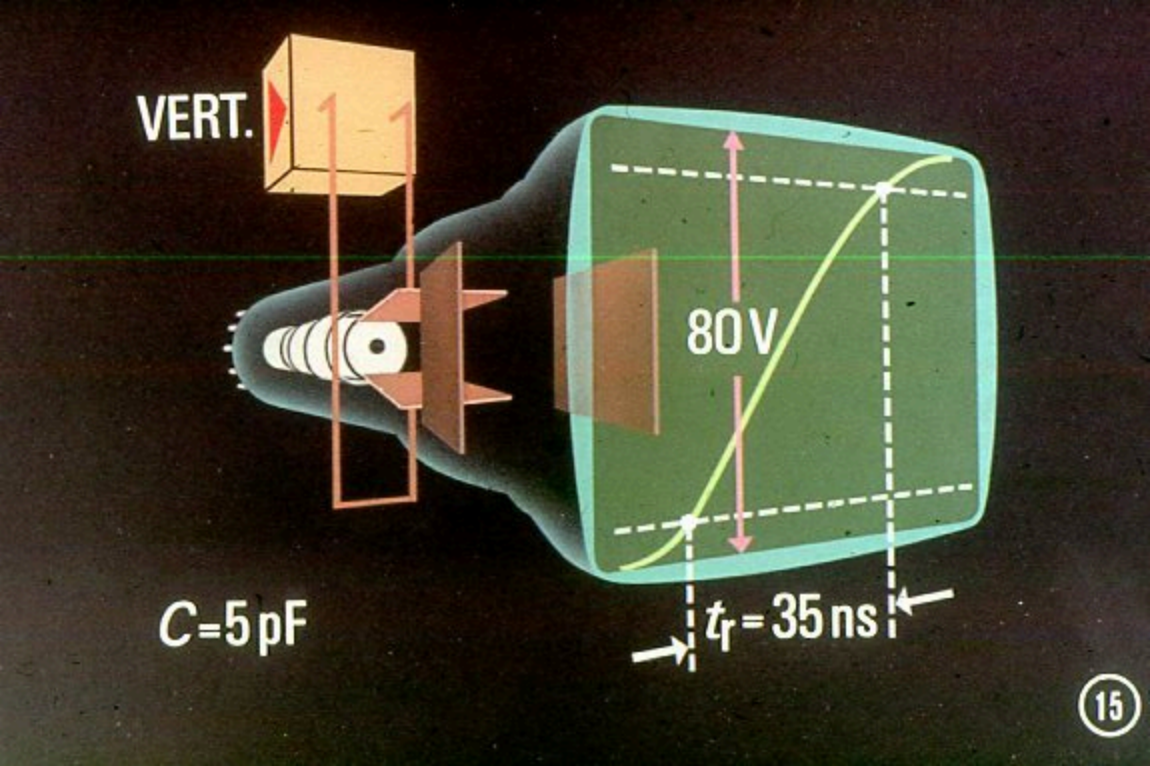

-1000 V/-2000 V
0V

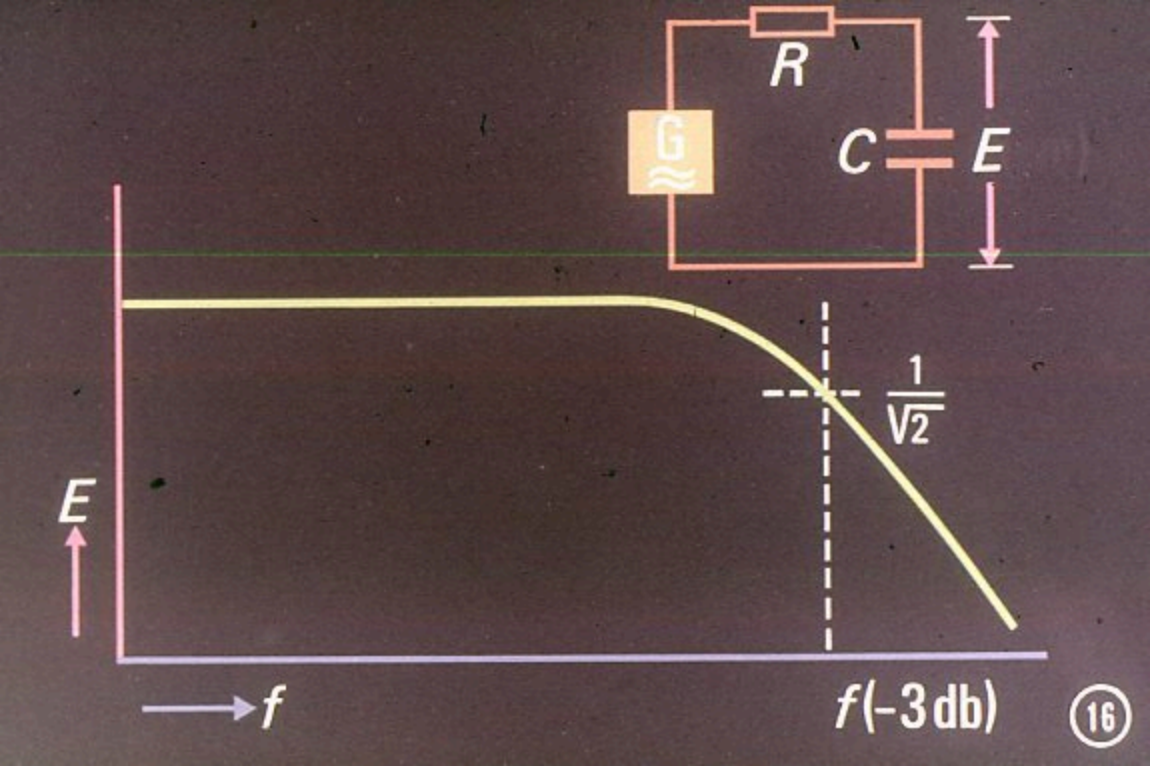

k
g2
g4
y1
x1
g1
g3
y2
x2

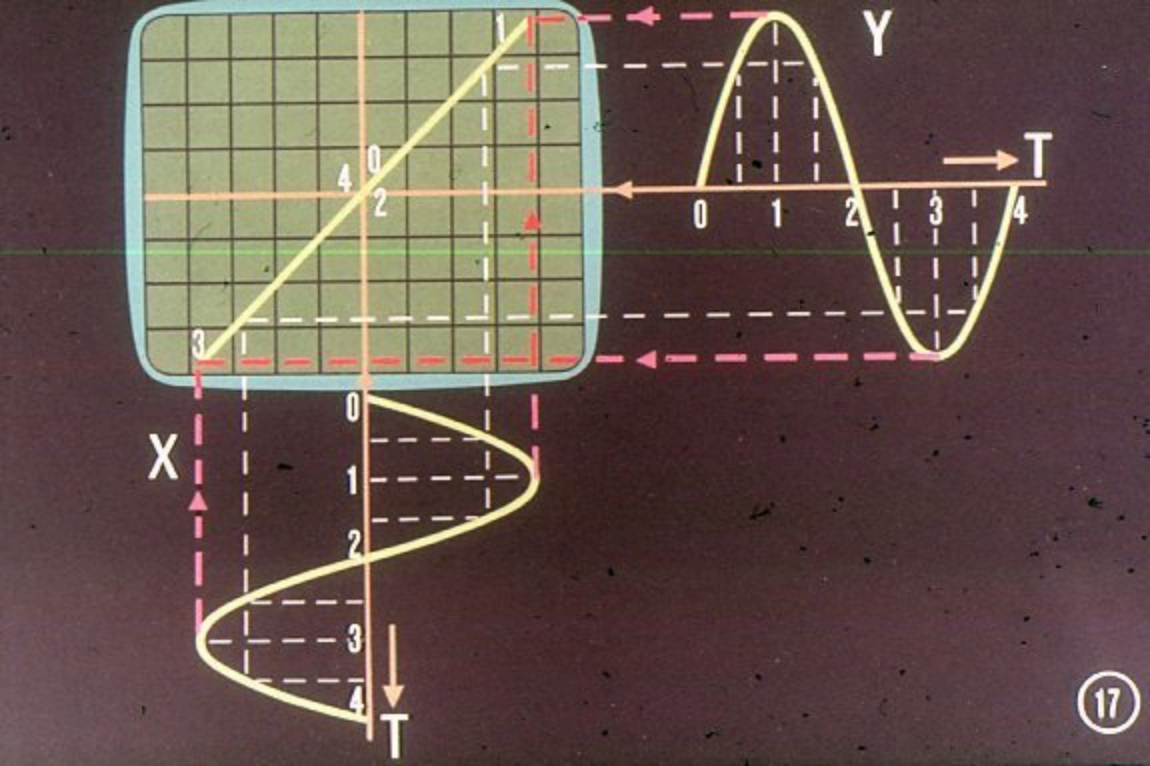

8 cm
10 V/cm
80 V

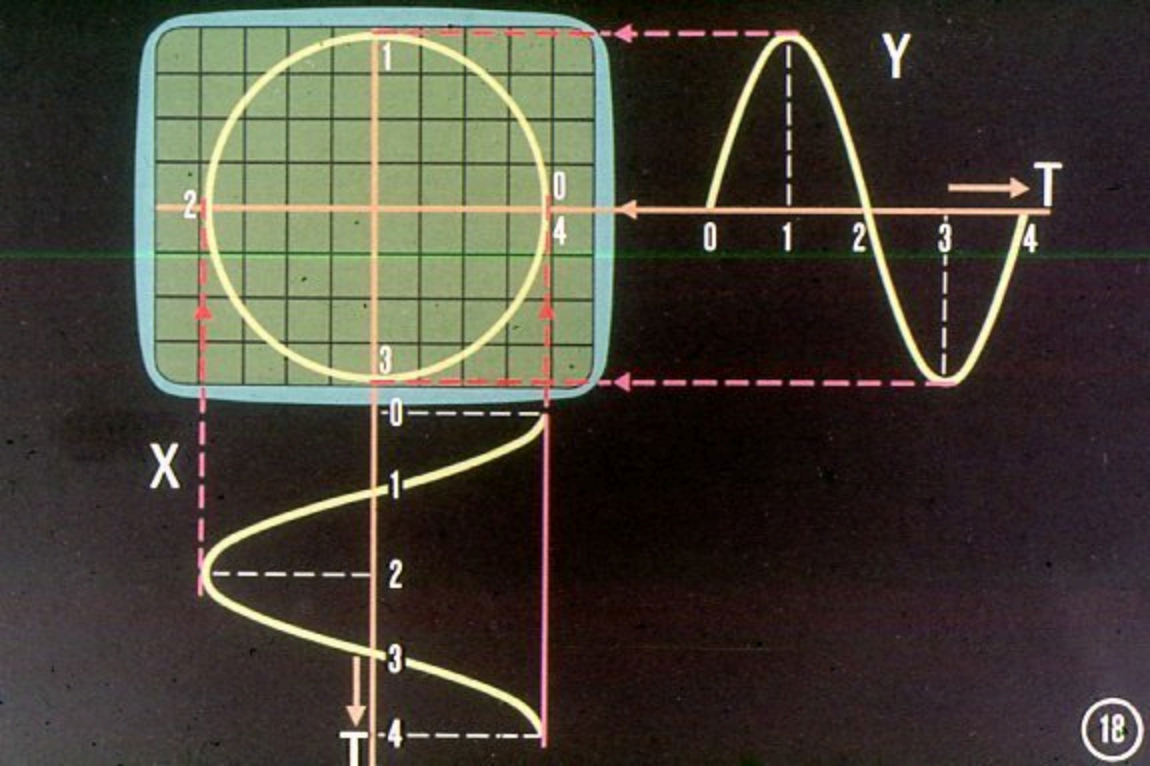

10cm
20V/cm
200V

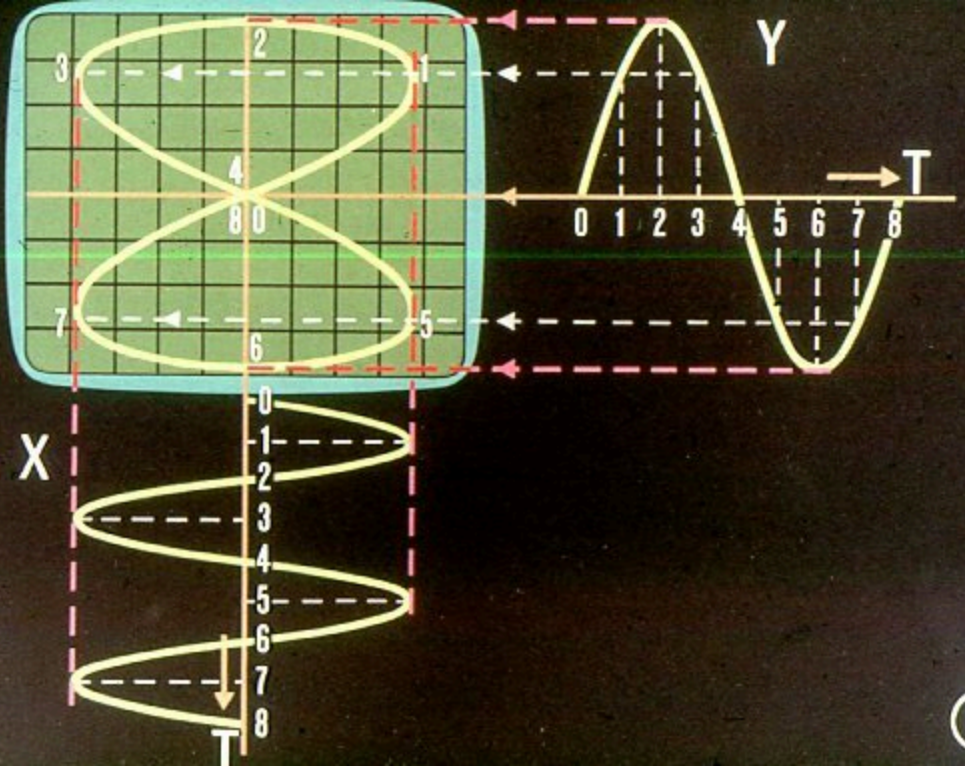

VERT.
HOR.

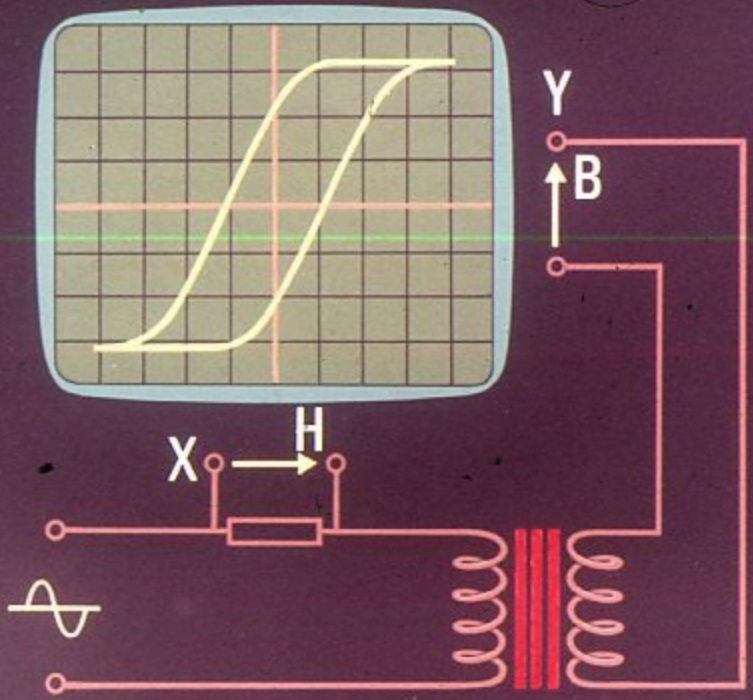

VERT.
80 V
C=5 pF
t_r=35 ns

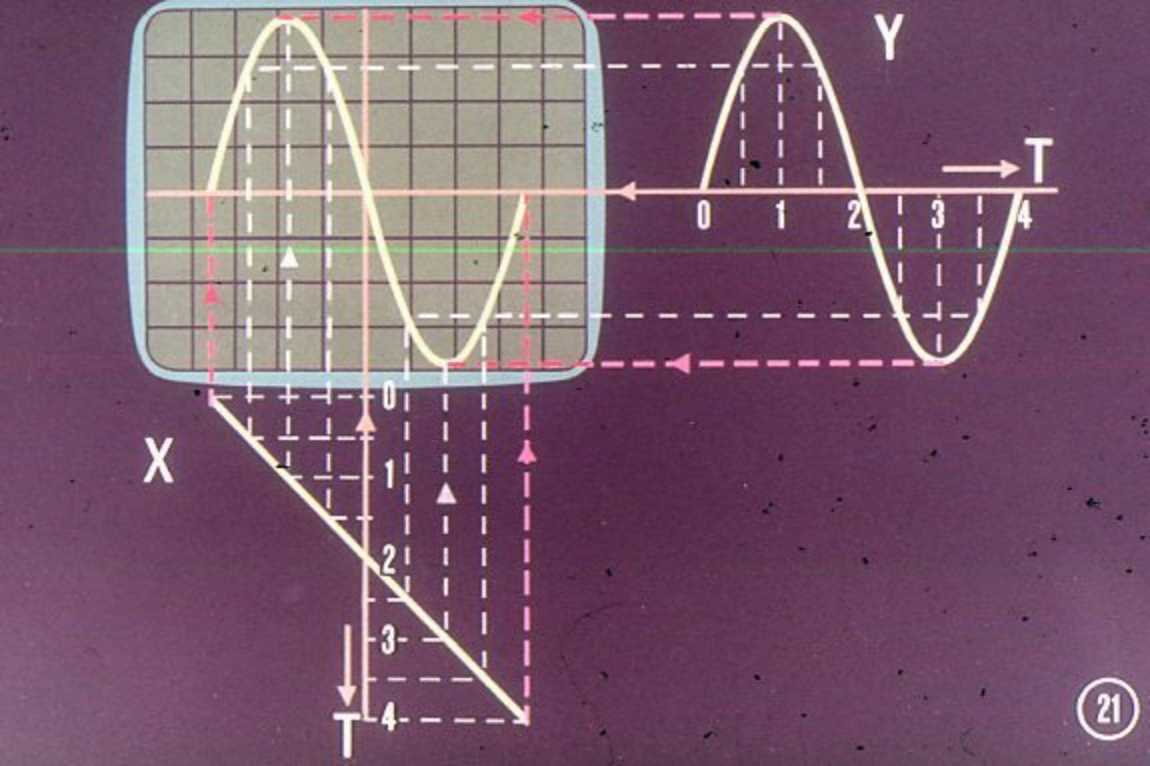

R
G
C
E
E
1
√2
f
f(-3db)

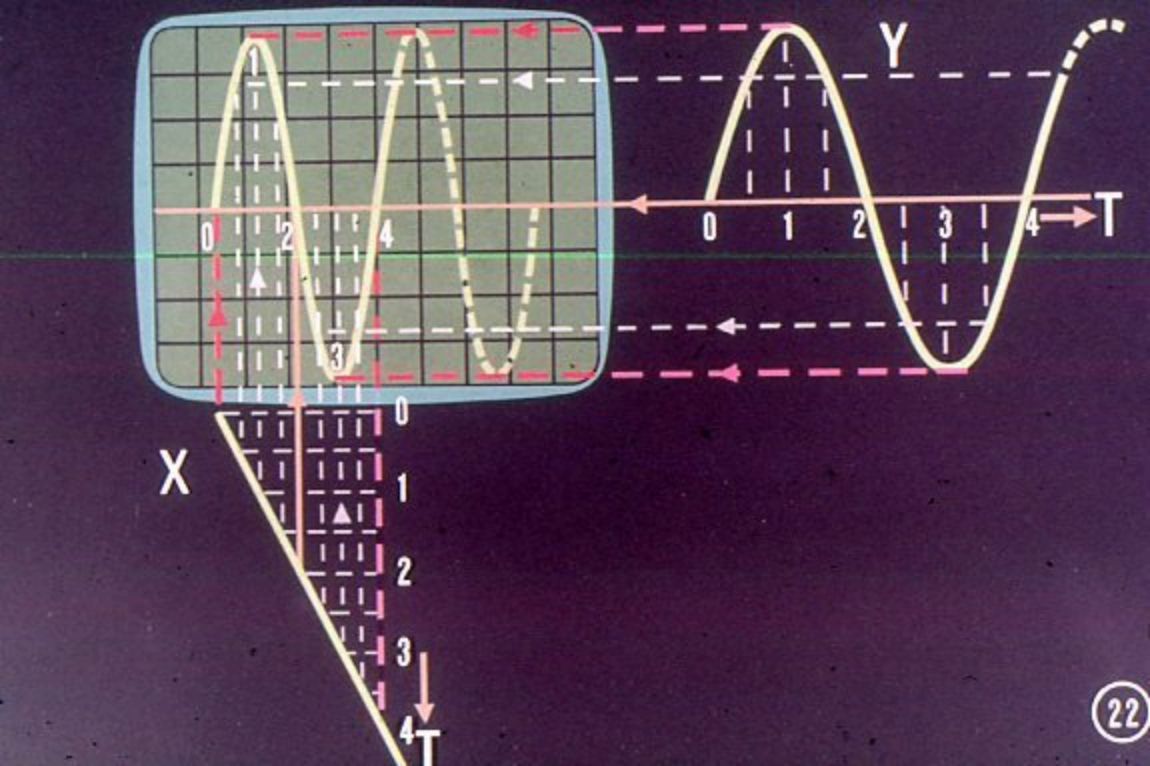

Y
T
0
1
2
3
4
X
T

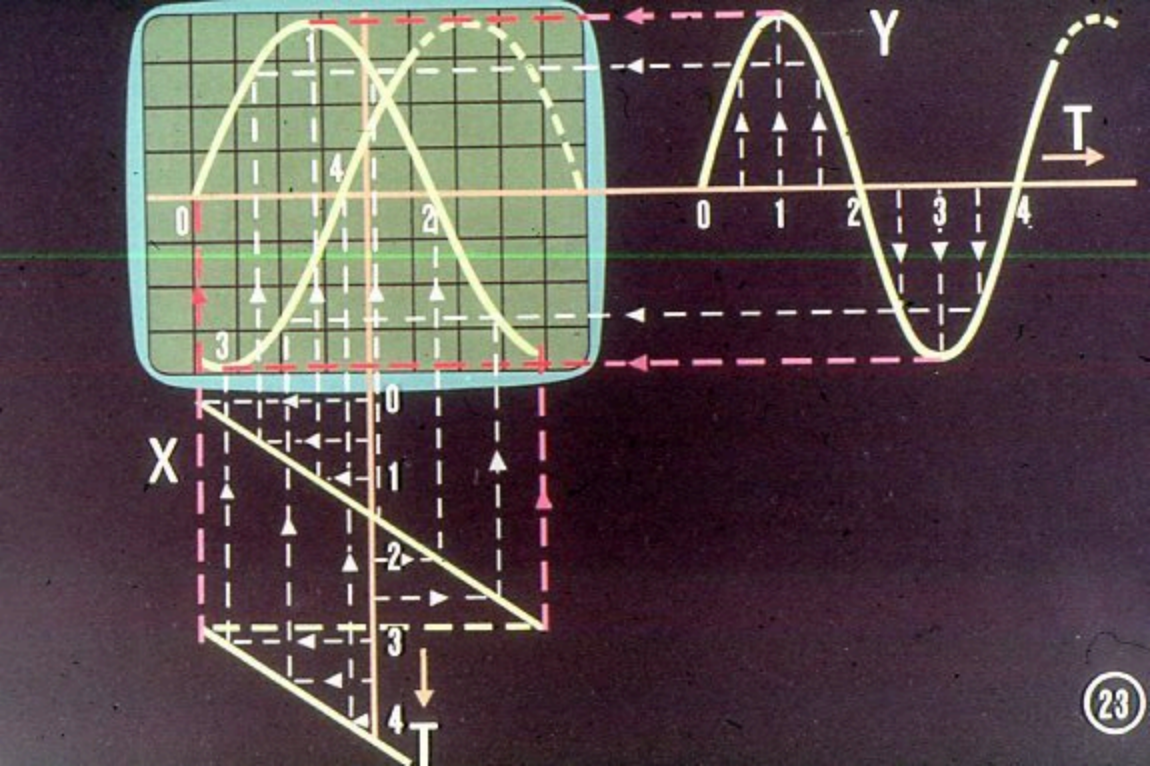

1
2
0
4
3
Y
T
0
1
2
3
4
X
0
1
2
3
4
T


Y
T
0 1 2 3 4 5 6 7 8
X
T
0 1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8


Y
B
X
H


Y
T
0
1
2
3
4
X
0
1
2
3
4
T


Y
T
X
T
0
1
2
3
4


Y
T
0
1
2
3
4
X
0
1
2
3
4
T

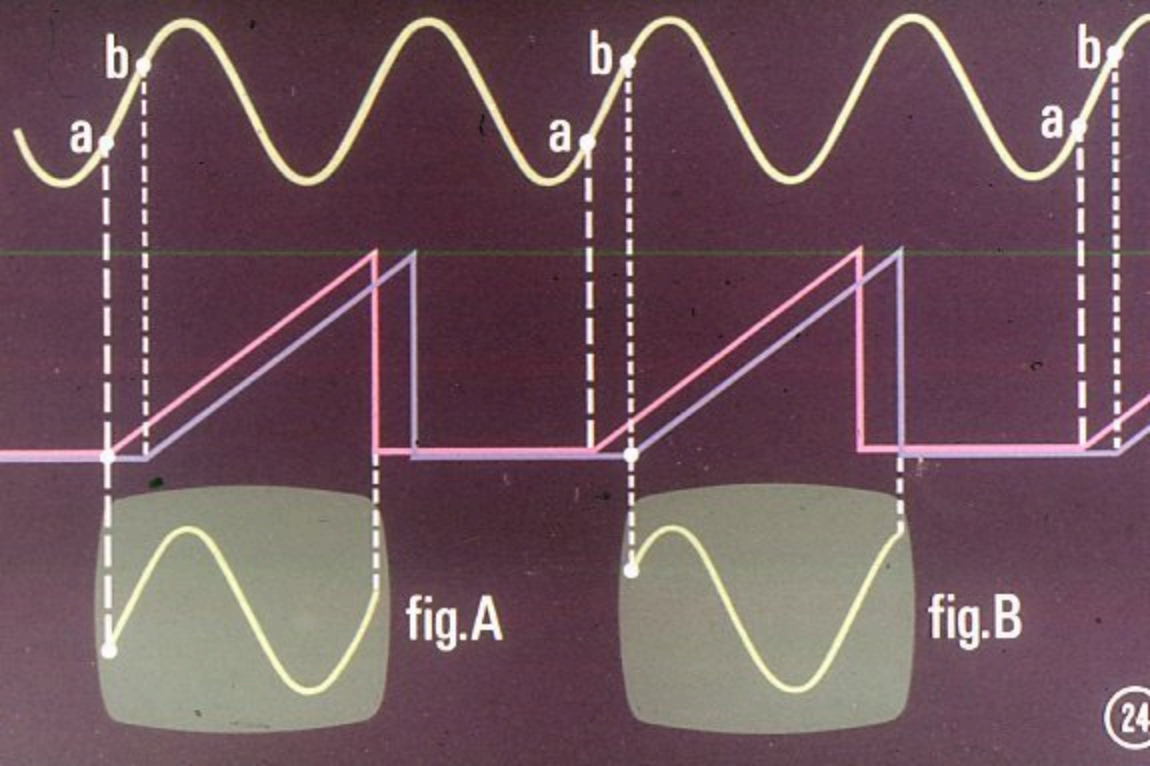
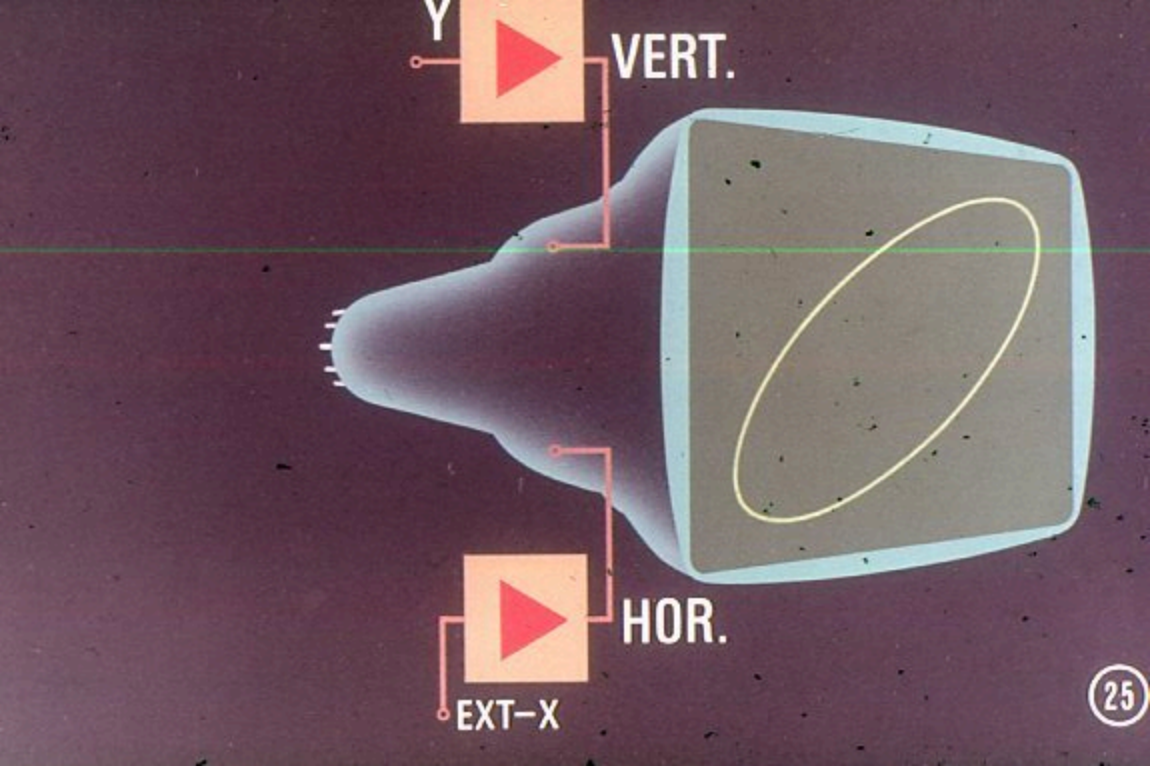
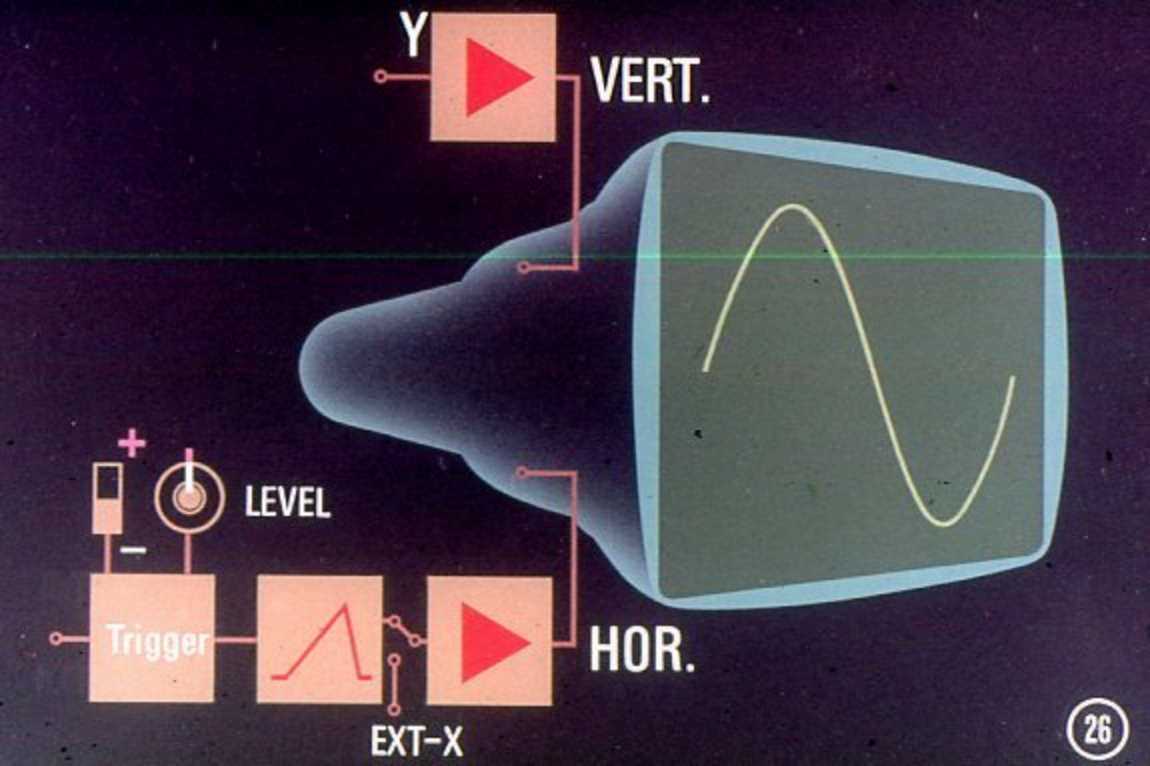
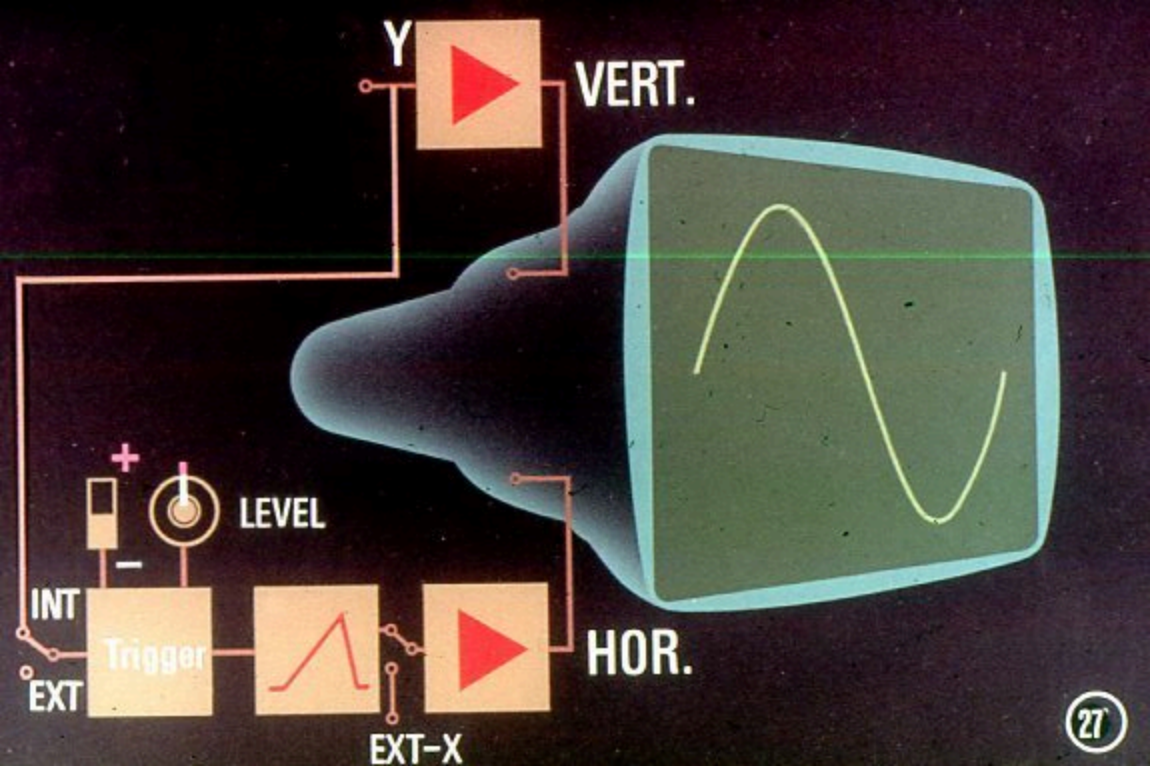


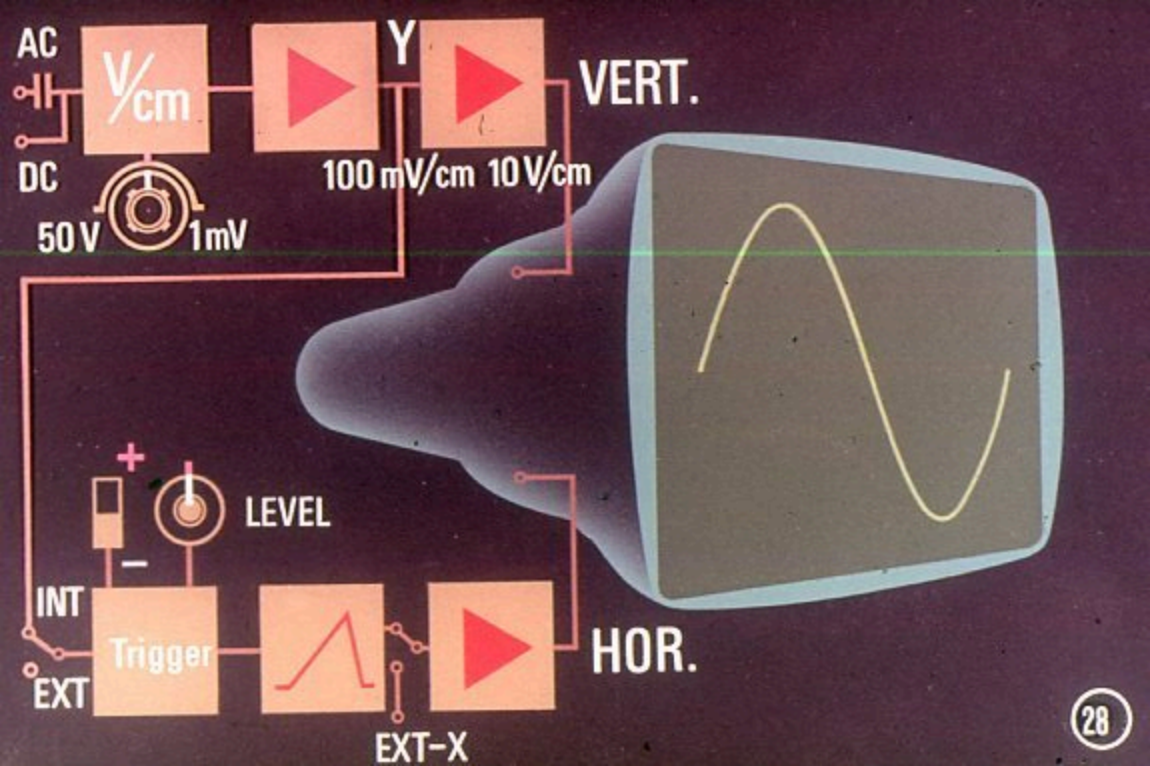
fig.A

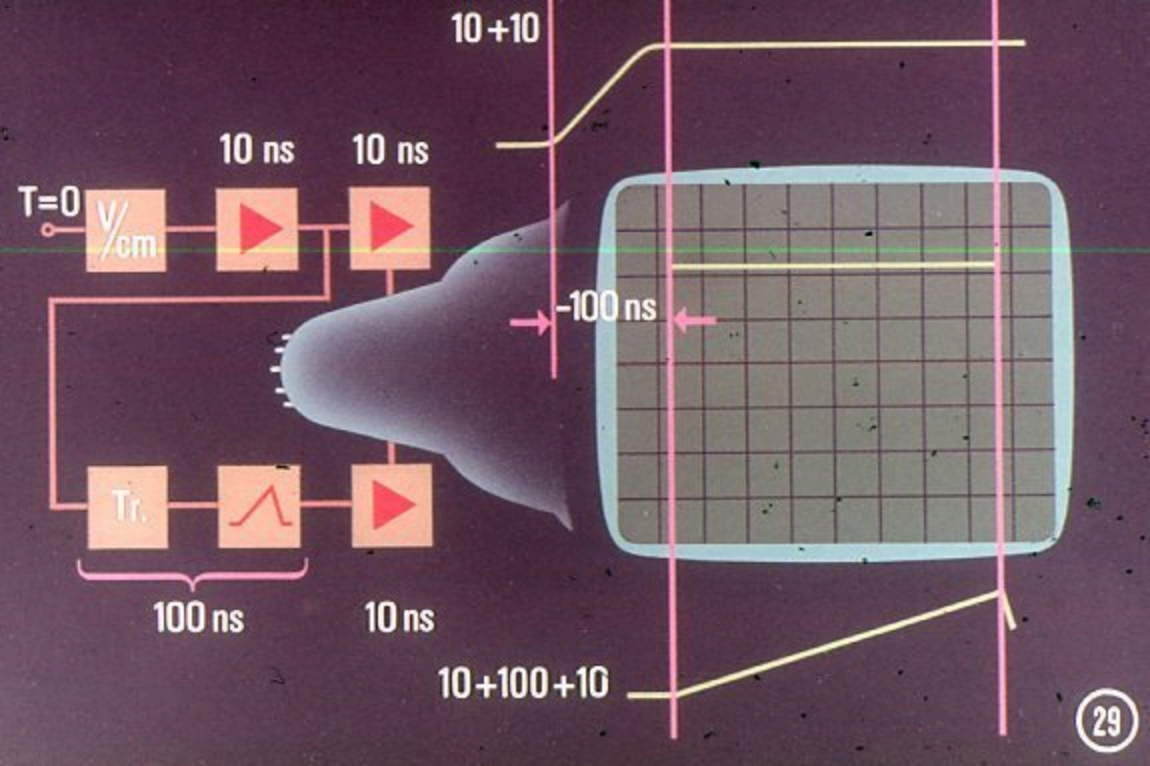
fig.B

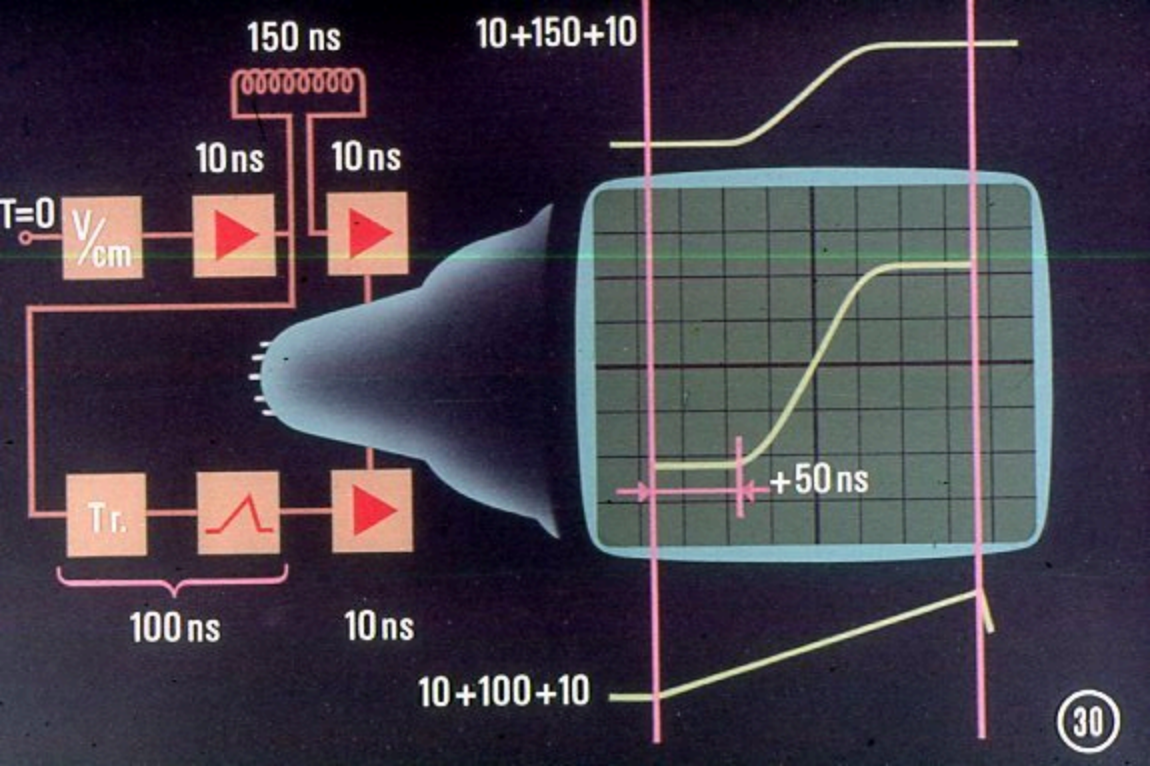

Y
VERT.
HOR.
EXT–X

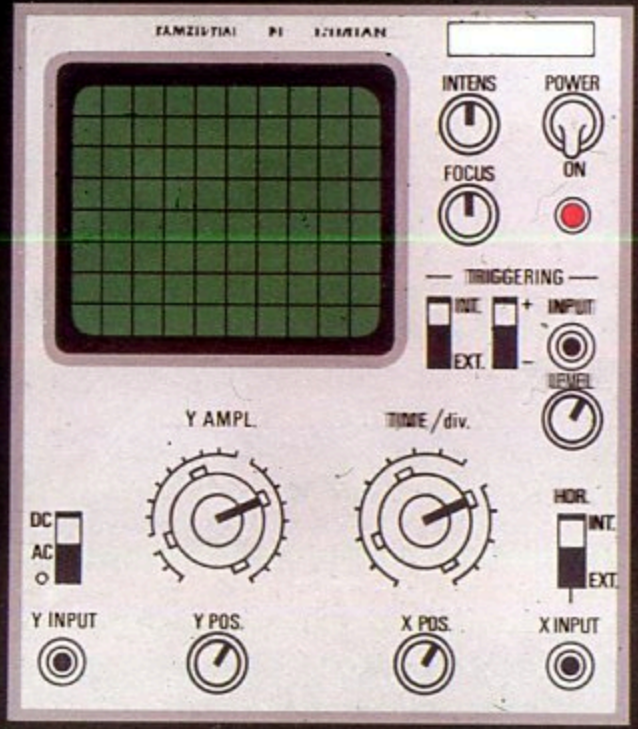

Y
VERT.
+
LEVEL
−
Trigger
HOR.
EXT-X

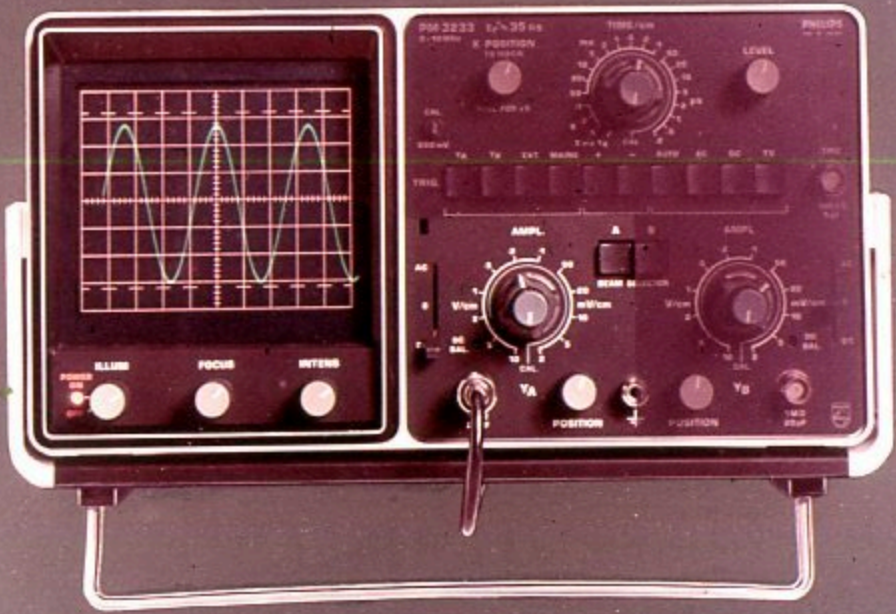

Y
VERT.
+
LEVEL
–
INT
Trigger
EXT
HOR.
EXT-X

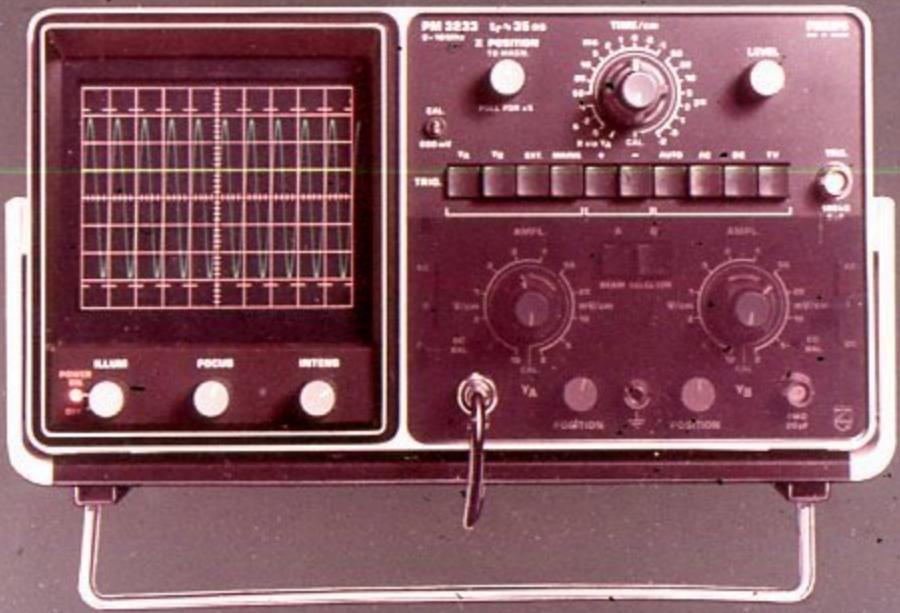

AC
V/cm
DC
50 V
1mV
Y
VERT.
100 mV/cm
10 V/cm
+
LEVEL
–
INT
EXT
Trigger
HOR.
EXT-X

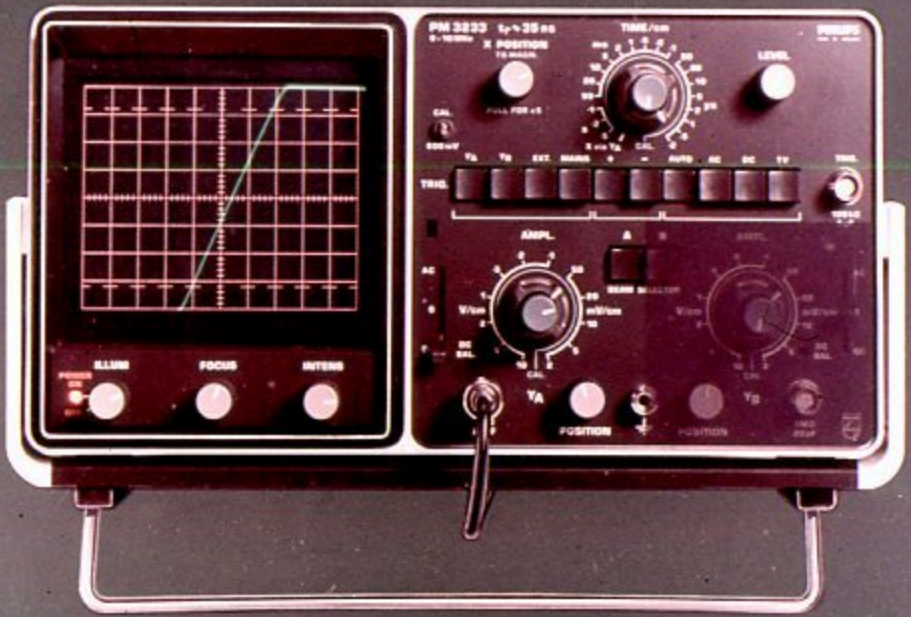

10+10
10 ns
10 ns
T=0
V/cm
-100 ns
Tr.
100 ns
10 ns
10+100+10


150 ns
10+150+10
10 ns
10 ns
T=0
V/cm
Tr.
+50 ns
100 ns
10 ns
10+100+10


INTENS
POWER
FOCUS
ON
TRIGGERING
INT.
EXT.
+
−
INPUT
LEVEL
Y AMPL.
TIME/div.
DC
AC
HOR.
INT.
EXT.
Y INPUT
Y POS.
X POS.
X INPUT


ILLUM
FOCUS
INTENS
LEVEL
AMPL.
POSITION
POSITION


PM 3233
TIME/cm
LEVEL
TRIG.
ILLUM
FOCUS
INTENS
POSITION
POSITION


PM 3233
X POSITION
TIME/cm
LEVEL
TRIG.
AMPL.
ILLUM
FOCUS
INTENS
POSITION
POSITION

OSCILLOSCOPES